

# The Atmosphere

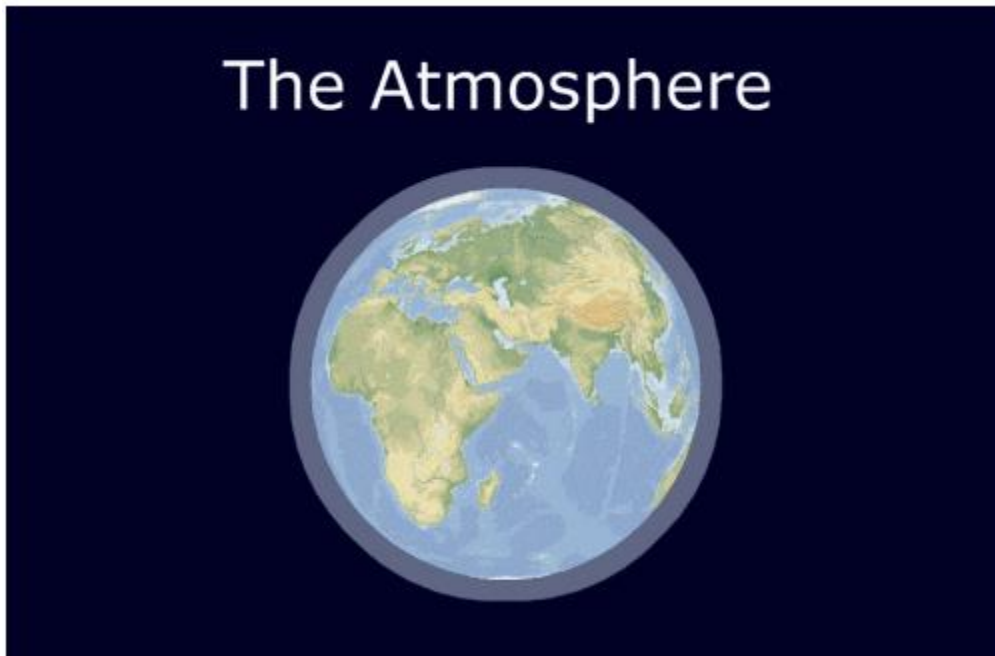
## Notes

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**Learning Objective:** In writing, SWBAT describe Earth's atmosphere using academic language.

## Atmosphere

the air around Earth



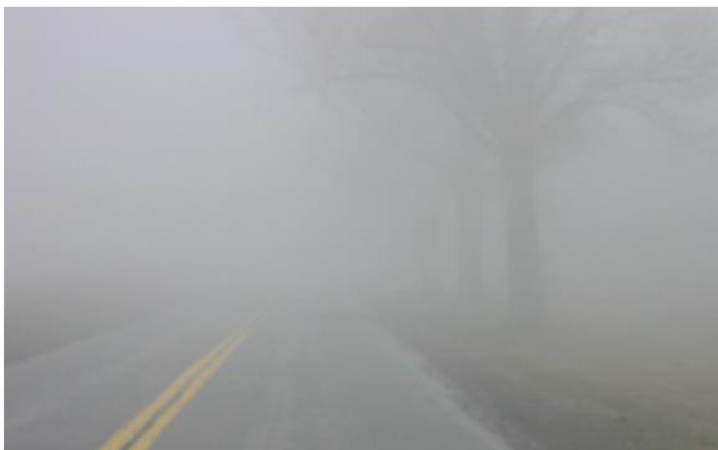
Earth's atmosphere

makes life possible by:

- having oxygen and other gases living things need
- trapping energy from the sun to keep Earth warm
- protects living things from harmful energy from the sun
- prevents Earth from being hit by pieces of rock from space

What is in Earth's atmosphere?

- rain
- fog
- clouds
- wind
- pollution
- water vapor
- particles (dust, smoke, salt, chemicals)



**Fog**



**Air pollution**

## The Atmosphere

### Check Your Understanding

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1. What kind of weather do you see in the pictures?

*The kinds of weather I see in the pictures are*

\_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_.

2. What do we find in the atmosphere?

*We find \_\_\_\_\_ ,  
\_\_\_\_\_, \_\_\_\_\_ ,  
and \_\_\_\_\_ in the  
atmosphere.*

3. What is the atmosphere made of?

*The atmosphere is made  
of \_\_\_\_\_ , \_\_\_\_\_ ,  
\_\_\_\_\_ , and \_\_\_\_\_ .*

4. What causes air pollution? Is there much air pollution in your city? Why?

*Air pollution can be  
caused by \_\_\_\_\_ .  
Denver \_\_\_\_\_  
pollution because of  
\_\_\_\_\_ .*

**Learning Objective: In writing, SWBAT discuss the most common gases and the trace gases in Earth's atmosphere using academic language.**

Nitrogen and oxygen the most common gases in Earth's atmosphere

Gases in Earth's atmosphere

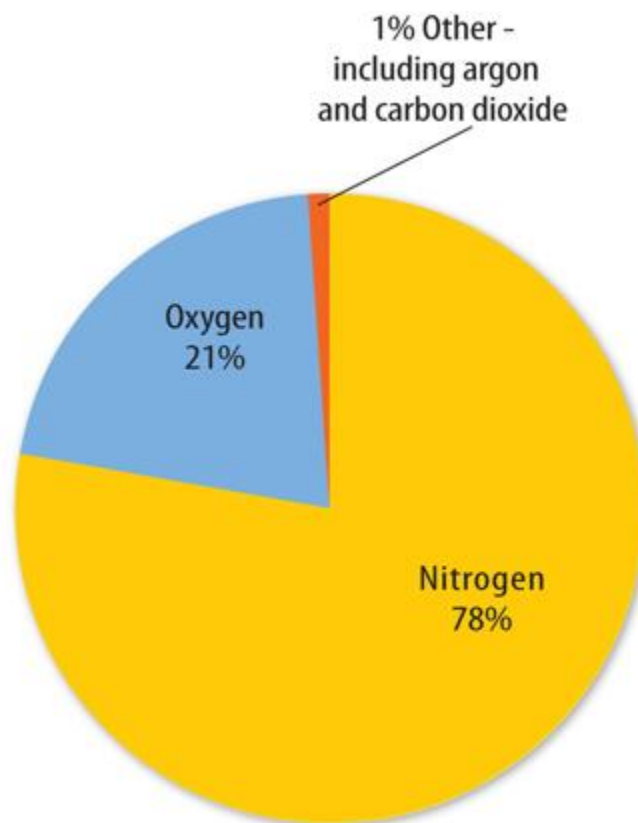
- nitrogen (78%)
- oxygen (21%)
- trace gases (1%)

Trace gases

gases that make up about 1% of Earth's atmosphere

Examples of trace gases

- carbon dioxide
- water vapor
- hydrogen
- argon



## The Atmosphere Science Skill

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1. What is the most common gas in the pie chart?

*The most common gas in the pie chart is \_\_\_\_\_ .*

2. What percent of the atmosphere in the pie chart is oxygen?

*\_\_\_\_\_ percent of the atmosphere in the pie chart is oxygen.*

3. What is one trace gas in the pie chart?

*One trace gas in the pie chart is \_\_\_\_\_ .*

### Carbon dioxide

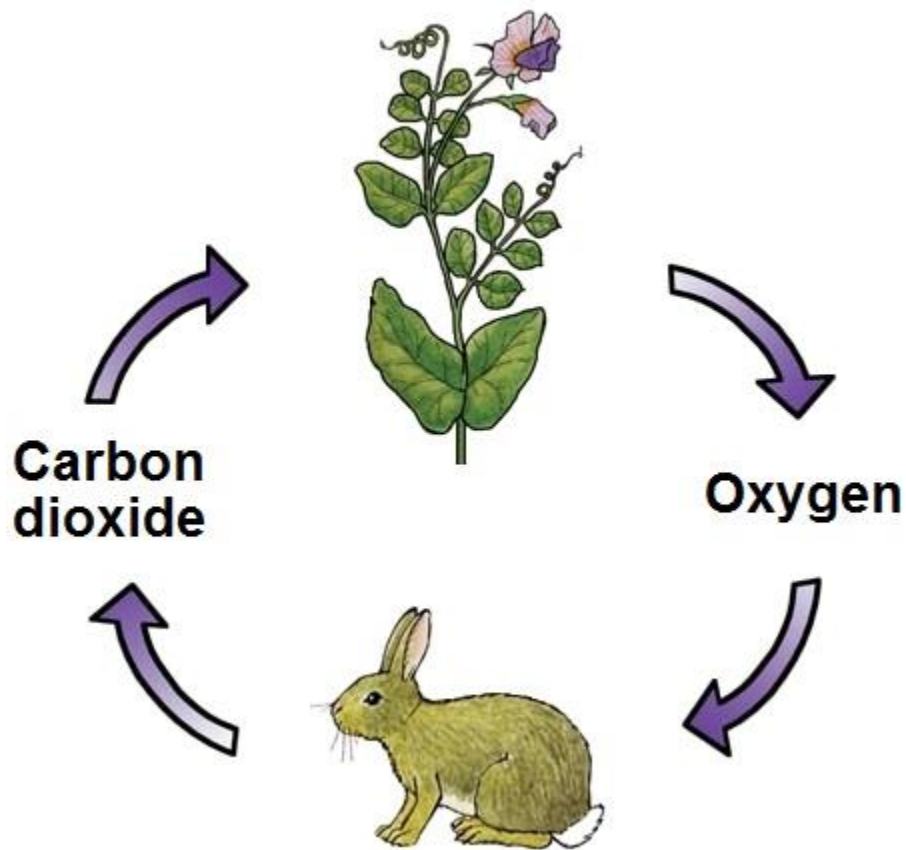
a gas that animals and people breathe out

Plants

take in carbon dioxide and make oxygen as waste

People and animals

take in oxygen and make carbon dioxide as waste



**Learning Objective:** In writing, SWBAT to sequence and describe the layers of Earth's atmosphere.

Layers of the atmosphere

- troposphere
- stratosphere
- mesosphere
- thermosphere
- exosphere

They are organized by changes in temperature

**Troposphere**

lowest layer of the atmosphere

It is the layer of the atmosphere closest to Earth's surface

Characteristics of the troposphere

- is where weather happens
- temperature gets colder as you go higher
- the layer we live in
- has 75% of the gases in the atmosphere
- extends from Earth's surface up to about 12 km

## Stratosphere

the layer of atmosphere above the troposphere

Characteristics of the stratosphere

- temperature gets warmer as you go higher
- has ozone layer that protects Earth from most of the harmful ultraviolet radiation from the sun
- airplanes travel in the stratosphere
- extends from 12-50 km above Earth's surface

## Mesosphere

middle layer of the atmosphere

Characteristics of the mesosphere

- coldest layer of the atmosphere
- 50-80 km above Earth's surface
- temperature gets colder as you go higher

## Thermosphere

Characteristics of the thermosphere

the fourth layer of the atmosphere

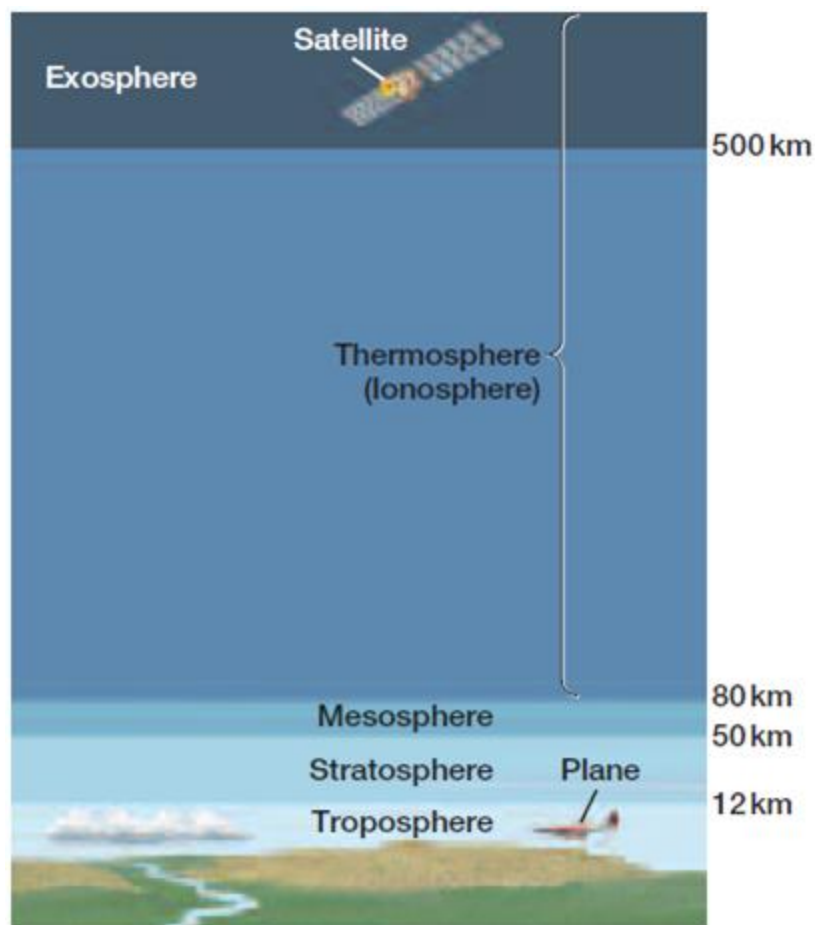
- largest layer of atmosphere
- temperature increases as you go higher
- warmest layer of the atmosphere
- 80-500 km above Earth's surface

## Exosphere

Characteristics of the exosphere

the outer layer of the atmosphere

- where satellites orbit Earth
- air is thinnest
- also known as “space”
- begins 500 km above Earth's surface





## The Atmosphere

### Check Your Understanding

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1. What are the two most common gases in the atmosphere? Which one is the most common?

*The two most common gases in the atmosphere are \_\_\_\_\_ and \_\_\_\_\_ . \_\_\_\_\_ is the most common gas.*

2. What gas do people need? What gas do plants need?

*People need \_\_\_\_\_ gas. Plants need \_\_\_\_\_ gas.*

3. Describe the troposphere. Describe the exosphere.

*Troposphere is \_\_\_\_\_ and it is \_\_\_\_\_. The exosphere is \_\_\_\_\_ and it is \_\_\_\_\_ .*

4. Can people live in the stratosphere? Explain.

*People \_\_\_\_\_ live in the stratosphere because \_\_\_\_\_ .*